Eureka

SCIENCE STUDENTS' ASSOCIATION,
LOYOLA COLLEGE, MONTREAL.
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INTELLECTUALS & PSEUDOS, and how they stack up-

Definitions: One is the real McCoy, the other varies from a facsimile to a phony.

Many comments have been passed on this paper since its beginning. Among the unfavorable there is one that stands out a mile; it doesn't have any detrimental effect on the paper itself but scares many a reader away. In their indifference (and their ignorance), people like nothing better than to criticize, in the pejorative sense, things about which they know nothing; this applies to politics, economics or any of the fields of human endeavor.

The people whose efforts have kept this paper alive (have made it to be living) do not claim to belong to any special class of highly gifted and inventive social strata, but should and do deserve to be called honest contributors to the intellectual development of the student body.

Most of the matter in this paper is within the reach of any being who is willing to forget about hearsay, prejudices and his or her own ignorance just long enough to read a page or two; not at the risk of joining the ranks of snooty intellectuals (pseudos) but for their own sake, their own enlightenment and experience of a new world of thought, imagination, and humor.

One more comment (if you've read this much you can easily bear a little more).

Why do some intellectuals take on airs that most other people don't have? In some cases, as one becomes aware of his intellect and of its unlimited potential, he becomes quite affected and conscious of his own importance as the bearer of a very valuable object; he becomes engrossed with himself, not stopping long enough to realize the existence of other beings around him with the same potential (more often than not it turns out that he has comparatively little potential and spends his time searching for something that isn't there).

The true intellectual is one who, having realized the importance of his spiritual powers, pursues their development, never losing sight of his human nature as a whole, its physical and social aspects.

_____ E. C. Lee (Eng. IV.)

SCIENCE is a SACRED COW

- Richard Harvey (Arts II)

When a white-robed scientist gazes up from his microscope or cyclotron to make some pronouncement to the general public, he may not be understood but he will certainly be beleived. No-one ever doubts the word of a scientist. Statesmen, philosophers, men of religion, educators, all are questioned and criticized; but scientists?... never! Scientists are exalted beings, perched on the topmost pinnacle of prestige, for they have a monopoly on the magic phrase 'It has been scientifically proven that..,'which appears to rule out any possibility of disagreement.

Thus the world is divided into scientists, who practice the Art of Infallibility, and non-scientists, frequently labelled 'laymen' who are taken for a ride by their opposites. The 'laymen' see the prodigious accomplishments of science and are impressed and overawed Science has achieved so much and has been right so often that it is hard to believe that it could be wrong in anything, particularly for the laymen, who doesn't have sufficient knowledge to answer back. This opinion of Mr. Stewart Cale in 'Liberal Education in Democracy' seems to sum up the average layman's impression of the scientist: "The scientist is a man of integrity and faith who trusts the basic laws of nature and intelligence to lead him into the paths of truth. His loyalty to truth is unquestioned; his capacity for patient and sacrificial inquiry is limited only by his powers of endurance; his devotion to the scientific method is unwavering; his objective is the welfare of mankind; and his discoveries, whether of medicine, mechanics, psychology, or what not, are the free possessions of democratic people." There would be a lot less scientists around if they had to toe that line.

Since it is only human nature to accept such flattery, the scientists lap up the lay opinion of themselves. But the layman, on the other hand, gets his opinion of scientists from the scients and the whole thing goes around and around in an increasingly vicious circle. Scientists, no matter how individually humble and modest, have a monstrously inflated collective ego. They are firmly convinced that, as scientists, they possess a number of very admirable human qualities such as accuracy, objective and eagle-eyed powers of observation, immense reasoning power, intellectual curiosity, tolerance and humility (for example, there is Selman Waksman, the man who'invented' antibiotics and describes his autobiography as 'this humble story '). They also, by teaching science to others, hope to impart these qualities (if only by osmosis). U nfortunately, vast masses of people come out of Biology or Introductory Physics not the least distinguished in these, or any other virtues.

They may also bear one of the following reactions to their course of studies:

I) they hated it and have depressing memories of 'doing' experiments which never worked out right, and they passed by frantic 'fixing' of the results;

2) they found the subject potentially interesting, but the teacher dull, and for the rest of their lives cherish a desire to know more of it;

3) they gobbled up everything and thought, because science has penetrated the structure of the atom to some small extent, that it can solve every problem in the universe.

The first two are understandable, but the last! When they at last become professional scientists they think that theirs is the right to pour vitriolic scorn on all other branches of learning from the heights of their dizzy pedestals. Such persons are hardly good advertisements for science. (There is, of course, a fourth type - the student who takes an interest in his subject, learns from it and goes on to promote science unselfishly. He is a rather a rare bird.)

Despite the many excellent reasons for studying science, not only for those who will go on to professional status but for the rest who will end up as the bulk of 'laymen', scientists stick to the idea that the real reason is something else, something higher and loftier altogether. They advertise 'the scientific method(or 'the scientific attitude' or such as bromides as the mystic leaven that raises science to its breathtaking height.

Mr, Gerald Wendt, a noted science-publicist, says "The student and the citizen need to absorb the scientific attitude, to master the scientific method of thought and to understad the basic concept of the sciences. Only thus, delving beneath the superficial and avoiding the burden of the technical, can they be ready to read further, and to understand in the decade to come what science is doing and what it can do. Only thus can their own intelligence be called into play." Just a minute Mr. Wendt, were there no intelligen men before science reared its ugly head?

Again, that all scientists are intelligent isn't always true. Acentury ago, only very unusual, highly original spirits were attracted to science at all; scientific was, therefore, carried out by men of exceptional intelligence. Now, when science is the 'thing' and attracts crowds of students because'that's where the money is ', or because they have nothing better to do, universities turn out 'scientists' by mass-production methods and, as a result, there are a great many scientists of very ordinary and many of distinctly subnormal powers.

This is not to say that we should stop the 'en masse' production, for their work is certainly indespensable, but let's not be convinced that scientists, as a group, are something special in the way of brains. Science has its intellectual giants, as does any other field; but it also has the large, intermediate group of average intelligence, just as in other fields; and there are many who are just plain stupid, for there is much work to be done by such people. To answer a scientific problem may require complicated mathematics-according to a formula developed by one of the intellectual giants-but almost anyone can be trained to use it.

Some scientists have such overweening self-confidence in their collective ability that they make no attempts to teach the limitations of science, for they hardly recognize any. Science, most certainly, is not infallible, and it is certainlt not a cure-all. The claims of science-fiends are grossly exaggerated. The idea that science is infallible and beyond criticism is a delusion, and a very dangerous one. What with scientists who are so deep in science that they cannot see its defects, and non-scientists who are too overawed to express an opinion, it is all too easy to recognize science for what it is - the great Sacred Cow of our times.

John Dewey, a worshipper at the temple of science, said: "The future of our civilization depends on the widening spread and deepening hold of the scientific habit of mind." But perhaps there is more truth in an old wisecrack of Oliver Wendell Holmes: "Science is a good piece of furniture for a man to have in an upper chamber, provided he has common sense on the ground floor."

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"The disease of cancer will be banished from life by calm, unhurrying, persistent men and women, working, with every shiver of feeling controlled and suppressed, in hospitals ans laboratories. And the motive that will conquer cancer will not be pity nor horror; it will be curiosity to know how and why."

"And the desire for service," said Lord Tamar.

"As the justification of that curiosity," said Mr. Sempack, "but not as the motive. Pity never made a good doctor, love never made a good poet. Desire for service never made a discovery."

- H. G. Wells -

(Reprinted from "Meanwhile"- with no permission whatsoever).

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THE SUPERFLUIDITY OF EMPIRICAL RESULTS

- Robert Groulx (Sc. IV)

Viewed externally, science undoubtedly staggers non-scientific intellectuals and non-intellectuals. Regardless of what the popularizres of science may think, the evidence seems to indicate this - that science is considered important only because it has progressed to a point where there is no hope of reconciliation with the uninitiated, and must eventually converge into an age of scientific saturation - the death of science since it is creative, not contemplative - where literature, religion and other more humanistic concerns will once more predominate; or, on the other hand, a continual resolution between so-called opposing views of the universe (dialectical intellectualism). Obviously this could not possibly be the prevailing outlook of every individual not directly associated with science but, as with science, each discipline breeds vast armies of blatant disciples, people who exercise their already strained resourses with the hope of securing the illusion of culture inherent in these various fields of study.

The great universities of the world are grossly overburdened. They have embarked upon a campaign, attempting, by employing a series of starvation lectures, to cram understanding and creative ability and facts into the minds of scholarly delinquents. They appear to make culture and creativity synonymous. Bigoted scientists consider the humanities to be ineffectual, and elements of the world's literary quarters make great sport of pretending to comprehend the creative impetus moving those involved in scientific work, then putting on snotty airs: "I know nothing of the Theory of Relativity, but science cannot possibly have any real philosophical implications; we know that philosophy is above and beyond scientific evidence because science is pure statistics; and, the mystical vision of the poet is the supreme product of the human spirit." In general, the philosophical systems of the existentialists and the scholastics are basically anti-science, although they do not directly admit this. Existentialism, contrary to widespread belief, does not in any way imply that beings are not composed, it does not deny natures or essence. In the first place, Existentialism is not a school of thought, it is the term used to designate those philosophical concepts that are a revolt against traditional philosophy; it says that only through individual existences can we come to know reality, that existence precedes essence for any conclusion to be valid. To some science fails with regard to the eternal problems, and to others it is completely invalid. The scholastics on the other hand claim that not only can we know things to be existing but we can definitely know why they exist. Thomas Aquinas, who represents the culminatin of Aristotelian scholasticism, has the entire field of philosophical inquiry so well systematized that it would seem improbable that there remain any worthwhile issues for succeeding generations, except maybe to expand upon certain insignificant questions. Wherein lies their gratitude towards the early Greeks, and who can say whether thet were scientists or philosophers? One charge against science is that it is necessarily limited and specialized because of the inordinate mass of empirical data that cannot possibly be assimilated within a life-time. This is not a well-grounded accusation. Although the scientific method is now absolutely essential for progress, it is not the original stimulus for the true scientific thinker, it does not bring about order to the vast interplay of ideas that precede a discovery. Genius, not the scientific method, brings order and unity into our views of the universe.

Another inept accusation is that scientific theories are obscure, far too obscure to be important as far as man's outlook on the world is concerned. Scientific theories themselves are not philosophical treatsies as such. To say that they are obscure is to admit uneasiness in the presence of ideas that may in some way rival preconceived notions, notions that may seem comfortable and satisfactory. Scientific concepts should not become embroiled in any philosophic or humanistic framework. They may, and often are, misinterpreted as being poorly established because at the moment they contradict some religious decree. Scholars then set

about devising ingenious methods to "explain away" scientific evidence. The overall effect has been that the overwhelming accumulation of facts underlying every theory has rarely, if ever, given way to the dictates of well-established fallacies. The original, basically religious concepts, however, to the consternation of generations of thinkers, eventually become modified, reinterpreted, and generally improved upon.

It would seem fitting at this point to examine the various concepts that have definitely moulded our cosmological views, However such an endeavor would entail a serious study of the evolution of thought since Aristotle which, needless to say, has been undertaken exceptionally well by philosophers of science like Whitehead, Cassirer, etc. And it is debatable whether an analyses of positivistic and scholastic views alone can yield a philosophic system devoid of the essential metaphysical dualism that seems at the moment to be insurmountable. The Greeks were in a more enviable position. They entered a world teeming with mysterious phenomena, and, what is important, one free of schools of thought, free of preconceived notions of the significance of occurences in the physical universe.

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"But," you may say, "none of this shakes my belief that 2 and 2 are 4." You are quite right, except in marginal cases-and it is only in marginal cases that you are doubtful whether a certain animal is a dog or a certain length is a meter. Two must be two of something, and the proposition "2 and 2 are 4" is useless unless it can be applied. Two dogs and two dogs are certainly four dogs, but cases may arise in which you are doubtful whether two of them are dogs. "Well, at any rate there are four animals," you may say. But there are microorganisms concerning which it is doubtful whether they are living organisms or not. You will be driven into saying: "Two entities and two entities are four entities." When you have told me what you mean by "entity" we will resume the argument.

- Bertrand Russell
(from "How to Become a Mathematician")

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EDITORIAL NOTE

The Eureka has once more managed to emerge with what we believe to be its original vigor. Incidentally, we had intended a second issue in December but it was postponed due to lack of material (we thought it would be improper to publish an entire issue written by M. A. S.).However, after the mid-year examinations (and a few days for celebration, of course) we had compiled a sufficient number of articles for one whole issue.

My fears of the Eureka becomming stereotyped due to overexposure of certain writers have been quelled. And it is heartening to note that the writers in this issue represent various years other than the graduating class, thus insuring the continuation of the Eureka.

Don't get the impression that we have been deluged with enough material for another publication, far from it! The intellectual output of this college does not spurt and gurgle like a mountain stream; its properties approach those of a stagnant marsh where even the most spineless thinking fish must either flee or rot. Nor do I think that the responsibility rests with the lecturers.

In third year, one of the required books for all students was a marvellous little work by John Stuart Mill (and which I believe is required reading in all university English courses). Here, both author and lecturer competently stress the dictum that freedom of thought and expression is the essence of freedom itself and the sole way to truth. That is the spirit upon which this paper was founded; there is no reason why it shouldn't be upheld. It has been our policy to publish any argument, no matter how controversial provided it be well stated.If certain people consider this to be a negative approach and compel us to relinquish our aims, the

Eureka will not be allowed to reach mediocrity and will be discontinued.

Whether or not we can produce another solid issue rests entirely with the students of this college, and as for two more issues - well! that would be saying too much for the present.

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SCIENCE AT THE CROSSROADS

..... John Pecknold
& Frank McCaughey

In the last two hundred years science has come from a position as an abstract subject of discussion to the all-embracing standpoint it holds today. Nothing in today's world is untouched by science - from the alarm-clock that wakes you in the morning, to the television that puts you to sleep at night.

During the last few years science has moved th a crossroads, there are two diverging paths ahead of it. There is the science that heralds a new era, a Utopia, and there is the foreboding cloud of possible self-destruction. The former is fodder for the public relations men who are trying to draw the youth of the nation into science; the latter is the ammunition of the frantic liberal artsmen who foresee an era of stark technology, a world run by gadgets.

Many of these do not even believe we shall last that long. A great percentage of the world's scientific resourses, namely the majority of American and Russian scientists, are being turned toward the development of genocidal weapons. It is true that these expenditures may be later justified by the development of peaceful uses of atomic power. At present nothing seems farther from the minds of our insane governments. Rockets and missiles may be justified as a means of interplanetary exploration. Here, a certain part of the money being spent is actually used for projects that are not directly warmongering. But their propaganda value is inestimable!

Admittedly, our armies are not girding up their armour for from purely dominating tendencies. Partly, it is protective; forced upon us by the actions of our potential enemies. To disarm unilaterally would be worse than folly. But, there seems to be little hope of having friendly relations with any nation while both parties are still desperately searching for the weapon that goes 'one better'.

We have no solution to offer, but it seems that if man continues to exhaust his resources searching for a better way of destroying himself, sooner or later, he must.

Presuming, however, that we are saved from atomic death, other problems confront us. Humanity is having great difficulty coping with a burgeoning population; food production is only just keeping up with all the new mouths to feed,how is it going to cope with a population ij China of more than a billion people by 1970 ? Science must answer this problem. On the other hand we have death from an overdose of science, on the other, starvation from lack of it.

Can science avoid both of these terrible dangers that confront it? certainly not while we have people blasting off about the terrors of automation and scientism. Nor while people are blasting off their missiles and bombs. Science has two paths to follow, both easy, both nice gentle slopes to annihilation. The only solution is for science to go down the middle; to climb the mountain confronting it rather than plunging into the valleys on either side.

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"Belief is no substitute for inner experience, and where this is absent even a strong faith which came miraculously as a gift of grace may depart equally miraculously."

..... C. G. Jung.

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Editor's Note:

Since work on the Dead Sea Scrolls has progressed for a number of years now, it is due time that we face up to the important findings that are rapidly accumulating. Now that the validity of these findings have been definitely and irrefutably established, the reading public is being plagued with a rather disconcerting mass of documents concerning these scrolls, all written by eminent scholars in the fields of archaeology and biblical studies. In other words it is absolutely necessary that a definite stand be taken for or against these findings. The following article is not an appraisal but a report of these findings....

THE DEAD SEA SCROLLS

--------Michael D. MacIntyre.

Early in the spring of 1947, a Bedouin boy by the name of Mohammed the Wolf was minding a herd of goats near a cliff on the Western shore of the Dead Sea. While climbing the mountain in search of a stray animal, he discovered a cave in which were various old jars. The jars he found contained some old scrolls. Later, other caves were found which contained still more old documents. These historical findings constitutes what is being hailed in scholarly circles as as the greatest biblical discovery in modern times, for they now serve to fill a great gap in our knowledge of the Jewish people just before, during, and immediately following, the life of Christ.

What we now call the "Dead Sea Scrolls" is what remains of a library which belonged to the community of the Essenss for at least two hundred years before Christ, and also for the first part of the first century, A.D. But who where the Essenes? Why should we be interested in them? The Essenes were groups of men who lived somewhat like the monks of today. They gave all their goods to the community, worked and prayed hard, and practiced the virtue of chastity. They were known to us in a somewhat vague manner before the discovery of the scrolls through the works of the two historians , Josephus (A.D. 37-95) and Philo (B.C.? *A.D.50).

Acertain group of these Essenes lived in the now excavated Qumran monastary, which is very close to where the caves were discovered(which contained the remains of their library). We know from the scrolls so far discovered, much about their beliefs, way of life, and general environment. We know, in fact, that a hundred or more years before Christ came on earth these Essenes held the same teachings that Christ taught, with very few exceptions. According to the scrolls, these "monks" followed the teachings of a certain "Teacher of Righteousness", whose principles were predominantly Christian..Besides this they practiced Judaism, though apparently not in quite the same manner as the orthodox Jews of the time. To many historians they represent quite clearly the former "missing link" between Judaism and Christianity. Furthermore, there is much speculation these days on the part of eminent scripture scholars that Christ was influenced by the Essenes during His so-called "hidden years", before He began to preach.

One of the outstnading leaders in the study of the Dead Sea Scrolls, is M. Dupont-Sommer, Professor of Semetic Languges and Director of Studies at the Ecole des Hautes Etudes; one of the main reasons being that his predictions and theories concerning the scrolls have an uncanny ability of coming true, as more scrolls are discovered and translated. In drawing a parallel between the "Teacher of Righteousness" and Jesus, he says: "Everything in the Jewish New Covenant heralds and prepares the way for the Christin New Covenant. The Galilean Master, as He appears to us in the writings of the New Testament, appears in many respects as the astonishing reincarnation of the Teacher of Righteousness. Like the latter, He preached poverty, humility, love of one's neighbor, chastity. Like him, He prescribed the obsevance of the Law of Moses, the whole Law, but the Law finished and perfected thanks to His own revelations. Like him, He was the elect and the Messiah o of God, the Messiah Redeemer of the world. Like him, he was the object of the hostility of the priests, the party of the Sadducees. Like him, He was condemned and put to death. Like him, He pronounced judgement on Jerusalem which was taken and destroyed by the Romans for having put Him to death. Like him, at the end of time He will

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be Supreme Judge. Like him, He founded a church whose adherents fervently awaited His glorious return. In the Christian Church, just as in the Essene Church, the esteemed rite is the sacred meal, whose ministers are the priests. Here and there, at the head of each community there is the overseer, the "bishop".

"All these similarities - taken together, constitute a very impressive whole. The question arises as to which of the two sects, the Jewish or the Christian, does the priority belong? Which of the two was able to influence the other? The reply leaves no room for doubt. The Teacher of Righteousness died about 65-53 B.C.; Jesus of Nazarene died about 30 A.D. In every case in which the resemblance leads us to think of a borrowing, it was on the part of Christianity. But on the other hand, the appearance of the faith in Jesus, the foundation of the New Church - can scarcely be explained without the real historic activity of a new Prophet, a new Messiah, who has rekindled the flame and concentrated himself on the adoration of men." M. Dupont Sommer, a former priest, now calls himself a "pur savant", without any religious affiliations.

People have wondered for a long time why the period from 180 B.C. to A.D. 100 has been so hidden. With the advent of the scroll discoveries, an old theory is receiving high priority. According to this presentation, the Jews and the early Christians were on very unfriendly terms, and thus, both groups were extremely happy to destroy any books written during the above period that they could get their hands on, in order to destroy any possible connections between the two groups. In this task they were almost completely successful. In relatively recent years, however, books of this period have turned up in Ethiopia, Slavonic, Arabic, Syriac, Greek, Latin and Armenian translations, and most significant of all, some of these same books appeared in the caves of Qumran. These are the books which form the "missing link" between Judaism and Christianity, and are known now as the "apocryphal" (today meaning counterfeit or untrustworthy) books.

One of the clear instances which throws light on the above theory is the following: let us examine a passage from the apocryphal book called, "Testaments of the Twelve Patriarchs (109-107 B.C.), fragments of which were found among the Dead Sea Scrolls:

"I was sold into slavery, and the Lord of all made me free:

I was taken into captivity and His strong hand succoured me.

I was beset with hunger, and the Lord Himself nourished me:

I was alone and God comforted me:

I was sick and the Lord visited me;

I was in prison, and my Lord showed favor to me;

In bonds, and He released me...."

Now let us examine a portion of the Sermon on the Mount, long thought to be Christ's original teaching:

"For I was hungry and you gave me food,

I was thirsty and you gave me drink,

I was a stranger and you welcomed me,

I was naked and you clothed me,

I was sick and you visited me,

I was in prison, and you came to me...."

The other day I was discussing the Dead Sea Scrolls with a fellow student, and he said to me: "How can it possibly be that the Dead Sea Scrolls-the greatest biblical discovery of modern times-have never been discussed in any of the theology classes I have attendee in the past four years?" I began my reply by telling him: "My dear fellow, that is a very interesting question....

"A prudent man should love several at the same time, then, if one should fail, he is not left unprovided."
- from 'The Love letters of Abelard and Heloise.'

THE LINEUP

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May we bring the attention of our readers to the book 'The Two Cultures and the Scientific Revolution' by C. P. Snow? This short, but excellent book is our Eureka choice for this issue as it deals with the Science vs Arts controversy, something with which, if you have read the preceding articles, you may be slightly familiar.

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autobiography of an american economic leader

by martin a sherwood

i am a tissue

an aqua kleenex

imprisoned

in a striped box

in a matching bathroom

periodically steamed

to send soggy warmth

pulsating

through

my fibres

making me unfit for

my culmination:

the short sharp snort

of a five year old

clearing clogged sinuses.

See the happy moron,
He doesn't give a damn.
I wish I were a moron -
My God, perhaps I am.

Anonymous.

The following article is humbly dedicated to the Sophomore Scientists of Marianopolis College, without whose inspiring lab. work it could never have been written.

PORTRAIT OF THE FEMALE AS A YOUNG SCIENTIST

by MARTIN A. SHERWOOD.

TIME — OBSERVATION

3.00pm. She enters the lab., talking to two others of the same species. For the past hour she has attended a lecture on the principles of organic lab. work. During that time her thoughts were confined to:

a) whether or not she can afford a new hairdo,
b) how she is going to bankrupt 'dear John' on their date that evening, and
c) whether or not the nose on the face of the little man that she has doodled in her notebook is too large.

If she is full of enthusiasm she knows what she is supposed to make and what materials go to make it. If, like 90% of her species, she is not enthusiastic she asks one of the other 10% (She could find out a great deal from reading the detailed account of the experiment in her textbook; however, this looks like work, a thing which she avoids at all costs.).

3.15pm. Her bench is now covered with assorted apparatus and several beakers brimfull (she doesn't bother with such nebulous abstracts as "the right amounts") with reagents. With cool precision she sweeps half this conglomeration onto the floor, smashing it.

3.30pm. Having replaced her destroyed apparatus by signing away half her father's savings and having again reduced the top of her bench to utter chaos she furtively peers over to the other end of the lab. where the male contingent are halfway through the experiment. She unsuccessfully tries to ape their apparatus setup. Frustrated, she falls back on her ultimate weapon and goes into:

Hysterics I: violent jumping up and down, flapping of arms and yelling for the instructor.

4.00pm. The instructor has set up her apparatus, started the reaction and explained everything to her in minute detail. She takes a loving look at 'her' experiment and then rushes off to powder her nose with the rest of the gaggle.

4.45pm. She returns from powdering her nose to find that:

a) the bottom has melted out of her flask, flooding the bench with boiling acid,
b) the whole lot has carbonized into a black, gooey mess, or
c) the instructor is frantically running around the lab. trying to keep twenty (hers and those of nineteen other girls) reaction vessels from reaching the critical temperature and blowing the place sky high. She sighs tiredly and leans on the bench, knocking over her apparatus. It is now time for:

Hysterics II: more frantic jumping, yelling and flapping of arms. The instructor gets her on her way again. She watches the boys, who are just finishing the experiment, and, in a loud voice, remarks that "Haste makes waste."

5.30pm. After watching the experiment carefully for three-quarters of an hour, with only thirty-five minutes out for chatting with others of the clan, she is getting bored. The time has come for the grand finale:

Hysterics III: as before, but her yelling now takes on a pitiable whine akin to that of a speeding police cruiser. This brings the last vestiges of manliness welling up in the instructor, so he leaves the wax images into which he has been skewering meat hooks and finishes the experiment for the creature.

Observations/ MAS.

5.50pm. She weighs 'her' product and finds it to be only 3% of the expected yield. Desperate, she does an encore of Hysterics III and persuades the instuctor to let her make up weight with "a teeny bit of stuff" (at least a pound and a half) from the stockroom shelves.

6.20pm. After keeping the instructor twenty minutes overtime (so that he has missed his train and will have three hours to wait for the next one), she knocks all her apparatus on the floor, smashing every bit of it. This saves washing it up and putting it away. She signs away the rest of her father's savings for a new set of apparatus and rushes off to powder her nose and go home.

Epilogue: 8.00pm. until 1.00am. She bores 'dear John' half to death telling him what a busy afternoon she has had in the lab....

THE SCHOLAR

A poem by Robert Groulx.

In his unfixed lair

Faced with the hardness of deeds

He caresses silken hair

Like a wombful of pretty weeds;

Consciously, hopefully praying:

Lips that disturb at the touch;

Thoughtfully and patiently saying:

I'm sorry, the thrill is not much.

"A man may believe in God or deny Him; in both camps honorable, upright men are found. But one who has never asked himself the question, who has never interrogated heaven with fervor or anxiety, such a one, whatever the length or the fame of his earthly span, is a nonentity, a more or less foolhardy nonentity clinging to the walls or floor of his prison." Jean Helle.

The Haiku.

With the recent upsurge, on this continent of Buddhism, the Western world has suddenly become aware of the very beautiful art and literature of China and Japan. The Haiku is a seventeen syllable poem intended to convey a spirit of 'Eternal Loneliness.' Some of these poems are greatly expressive and have an unrivalled beauty to anyone, of whatever religion, who enjoys poetry. Here, then, are a few translations of Haikus which I have found particularly impressive:

A branch shorn of leaves,
A crow perching on it -
This autumn eve.

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In the dark forest
A berry drops:
The sound of water.

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(compiled by MAS)

With the evening breeze,
The water laps against
The heron's legs.

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The wind blown
Smoke of Mt. Fuji
Disappearing far beyond!
Who knows the destiny
Of my thoughts wandering away
(with it?

ON THE ADVISABLENESS OF SPACE EXPLORATION

Michael D. MacIntyre.

"Who wants to go to the moon anyway?" says many a modern person today. People who do not think much of sending rockets into space hold such opinions usually for good reasons. After all, any scientific program as vast as that outlined for exploring outer space is bound to eat deeply into the taxpayer's pocket. And what is given to the citizen in return? At the most he is now and then given the satisfaction of knowing that his country has accomplished a new scientific feat ahead of some other nation. He concludes privately that he would rather see the same money spent on highways or children's playgrounds.

The reason for much indifference on the part of people in America towards an all out space program is that they do not realize how they can benefit from such an effort. They watch their children playing in toy space suits, read about rockets being shot into orbit, hear the "beep-beep" of a new Russian satellite over the radio, and from such evidences form their opinions as to whether or not all this is anything more than a big farce. The truly important reasons for space travel have been grossly overlooked by those who are charged, in one way or another, with keeping the public informed. How the opinion of the man on the street would change if only he realized the vast benefits which will be derived by mankind through the ultimate conquest of the regions outside our earth's atmosphere.

When man has established himself in outer space, he will have access to the world from outside the planet. He will then be able to learn more about, and eventually control, the vast weather systems of our earth, through the use of space stations and satellites, in conjunction with atomic energy. With controlled weather, rain can be made to fall regularly on desert areas, thus helping to solve the great food-supply problems now confronting the world. It has been shown experimentally that practically every domestic plant will thrive in desert areas so long as sufficient moisture is provided. People will be able to plan their holidays better as they will know on which days rain and sunshine are to be expected.

With the aid of space-stations harnessing solar-energy, the science of communications will be greatly advanced. Radio and television stations will ~~reel~~ relay their signals to satellites orbiting the earth, after which they will be transmitted to points all over the world. The Montreal television viewer, for example, will be able to tune in the channel of Canton, Red China, by merely flicking a switch. Television sets will be built with hundreds of channels in order to tune in all the major cities of the world. This will obviously aid nations in knowing each other better, and thus aid in the peaceful coexistence of the world's nations.

Apart from personal benefits however, there is a greater reason, for our giving strong support to space research. That reason is ~~pl~~ plain curiosity - the intrinsic desire of man to improve himself through gaining knowledge of the universe in which he lives. Is there a thinking man among us who would not like to know whether there is life on Mars, or possibly a form of rational life on some planet? If there is, I should like to meet him. Let us face facts. Knowledge gained through exploration of the universe could change our entire way of thinking! This alone is surely enough reason for any man to support space exploration.

As evidenced by the way tax money is being allocated in the United States for space research, the American people are not yet giving anywhere near their full support of the investigation of outer space. This is a situation which we must soon change, or one of the greatest opportunities man has ever had will be missed. It is up to us, the thinking youth of today, to explain to those, either ignorant or misinformed, how they will benefit from space exploration, and, in doing so, we will bring about the Golden ~~XXX~~ Space Age ahead of us.

THE NEED FOR ARTSMEN..... "Chappelet"

By virtue of our presence, we feel that the noble and ennobling science society is about to come under some form of censure. Knowing this, we feel it our duty to rebut. Not that in so doing, we wish to offend any dignified and stolid artsman into an argument, which he, be virtue of his superior rhetoric, would surely win. But rather, we wish to show to all artsmen the value and natural superiority of their course,, feeling that once they have realized this, they will see no need to stoop so low as to run down the other faculties.

The arts course is a good course. In it the students read books (a practice that no one in his right mind would indulge in, were it not for the reward of a B. A.). Not only do the students read the books (every last page, including introductions, dedications and footnotes), but they discuss and form opinions on them, dictated slowly and with considerable patience by the teachers. Moreover, they have to do research on these books. For those of us not in arts, who have done no research, it has been said that to copy from one book is plagiarism, from many, research. In fact, they spend so much time doing research that they are given three or four afternoons a week, as well as innumerable free periods, in which to do it.

The purpose of all this work is to teach a man to think clearly and maturely. Since this is also the purpose of high school, we can easily see the logical continuation between the two.

Thus grounded in the wisdom of the ages, the artsman works out a strong personal philosophy of life (20I, ")" 202, 303), which points clearly to his ultimate end (theo. IOI, 202, 303, 404). He then goes out, fully prepared to face the world, and looks for a job that requires no training.

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SCIENCE AND PHILOSOPHY

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Introduction

Science and philosophy are manifestations of the mind in operation. There is no science in a book, no mathematics on a sheet of paper, no physics in a formula, until it is in the mind. Marks on paper are meaningless till they become part of the individual. There are philosophers and scientists, but no science and no philosophy. Scientists and philosophers both, use the method of abstraction. By their definitions, by their tools, and by the nature of their work, the physical scientists are abstract and do not necessarily reveal reality. They represent only one aspect of nature, this aspect ennables them to predict and sometimes to control the workings of nature.

The object of philosophers and of scientists is identical - the discovery of the unknown. Philosophers base themselves on logic and common sense whereas scientists base themselves on logic as well as the inductive method of reasonong.

Part I

Pythagoras, the first mathematician of recorded history, determined mathematical thought for approximately the next two thousand years. This is in a way unfortunate due to his confusion of number and religion and the contradiction involved in actual incommensurable magnitudes. For this reason Greek thought was restricted to the study og geometry. Number theory was left to mystics ans quaks.

Plato's attempt to establish a theory of invariance led him to the dualistic conception that all permanence lies in the world of ideas. This represents a retreat into a dream world.

Again Zeno's paradoxes show the confusion of the ancient mind with mathematics and reality. Zeno supposed that to go through any distance one would have to go half way and then half way again ad infinitum. Mathematically speaking this represents an infinite series whose sum is exactly the point it was required to reach. One can also ask whether such an infinite process can be accomplished

in a finite number of time. Modern mathematics tells us the answer is yes. Zeno's other paradoxes, that of Achilles and the turtle and that of the arrow in flight, can also be solved. Weierstrass showed that the arrow was always at rest thereby giving us a clue to the problem. With regards to Achilles and the turtle we are indebted to Georg Cantor. Achilles catches the turtle with the help of transfinite classes and the arrow sails blithely along aided by the differential geometry. Thus the paradoxes which confused philosophers for a millenium were solved only by stating that the problem could not be thought of as Zeno expressed it. This is the same as saying I cannot solve the problem you state, therefore you cannot state your problem that way. With the advent of modern thinkers, endowed with a disrespect for the traditional and an astounding insight, a solution was found which faced the problem and which was entirely satisfactory. These examples have been given to show the interest and outlook of the early philosophers. This inexact outlook was to prevail till the Renaissance.

The early Greeks were the first to realize that they as individuals could state with authority an explanation of the around them. Their authority was reason. These philosophers, even though their outlook was juvenile and their reason faulty, were the only race in history to attempt the method of rational explanation. This is the heritage they have given us, They realized that man using his intellect could attempt an explanation of the world. This gives us our first insight into both science and philosophy as manifestations of the mind in operation.

Until the middle ages the memory of the disaster of the fall of civilization made man hesitant to accept an explanation of the universe which was not in agreement with tradition. New thought ceased to be. ONnly when civilization again became stabilized did philosophers admit their ability to explain cosmology in virtue of their own ability to discern truth. We still notice however a very great respect and dependence upon early Greek tradition. The Renaissance showed the total admiration for the early Greeks in the field of the humanities. After the Renaissance the scientist threw off his hindering tradition in search of new facts. This was the Age of Discovery, and continues to the present day.

Part II

The trend of eager search and rigid discipline widened the horizons of knowledge at breahneck speed. The disdain for tradition and reliance on own intellectual power made possible discoveries which seemed to contradict the most cherished beliefs of men of "commonsense". Those who called Euclid's axioms self evident truths were laughed out of the room; those who found comfort in the pseudo-mystical foundations of mathematics were left suspended in mid air; and those who believed with fervor in the then well-established physics, were set adrift in the dizzy world of Riemann and Lobachevsky, bombarded by the quanta of Planck, and made even more bewildered by the famous statement of Heisenberg. Now instead of of peering along the straight line of Euclid, they sight the geodesic of Einstein. Cosmology is in a whirlpool of unrest from which the man of common sense feels he must retreat or lose his sanity for he has not yet realized that acute understanding is asked of him.

Again because of the traditional idea that mathematics and physics are intelligible only to a few super brains causes him to draw back after a point has been reached which requires a little bit of discernment and understanding. This represents a hangover in thought from the dark ages. Their security lies in tradition and in the explanation someone else gives them. But the reasons and the reasoning process is still beyond their grasp.

Part III

To the philosophers of old, matter seemed to be in essence something which was extended and had dimensions, something which persisted in time. But space and time have now become relative to the observer. There is no "one" cosmic space or time. Instead of lumps of matter called atoms, and instead of charged forces called electrons, which existed in a three-dimensional world, we have a "series of events" in a four dimensional space-time, events some of which seem to be connected so as to present an air of persistence as does a wave on the sea or a musical note. In this four dimensional world there are only differential relations which connect together neighboring events in space and time; Scientists

are certainly not always concerned with the inner structure of the terms used, but rather with the mutual relations of the terms.

Physical science now more fully conscious than ever before of the concepts which underlie it, is becoming surer of its power in its own kingdom. Sometimes it strikes out into new regions in the ardent spirit of youth seeking adventure, with no time as yet to reduce the fresh-won territory to order. After this, a sort of great synthesis of knowledge occurs in which a great deal of ideas are reconciled, and in which confusion gives way to unity. In this way the physical scientists continually widens our world, and deepens our grasp of what goes on around us.

Conclusion

Many people seem to feel that the scientist and the philosopher are in fundamental conflict. The technological progress that results from science is important to the world but it is far less important than the intellectual and spiritual progress that science can help to accelerate. In conclusion I would like to say again that science and philosophy exist in the mind only, and have as their object knowledge. It is in this way that they are the same.

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_____ When we busy ourselves to find the answer to a question, we are going upon the hope that there is an answer, which can be called the answer, that is, the final answer. It may be there is none. If any profund an learned member of the German Shakespearian Society were to start the inquiry how long since Polonius had had his hair cut at the time of his death, perhaps the only reply that could be made would be that Polonius was nothing but a creature of Shakespeare's brain, and that Shakespeare never thought of the point raised. Now it is certainly conceivable that this world which we call the real world is not perfectly real but that there are things similarly indeterminate. We cannot be sure that it is not so. In reference, however, to the particular question which at any time we have in hand, we hope there is an answer, or something pretty close to an answer, which sufficient inquiry will compel us to accept.

__ Charles S. Peirce

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